

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-270343

(43)Date of publication of application : 02.10.2001

(51)Int.Cl.

B60K 26/02
F02D 11/02

(21)Application number : 2000-087177

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(22)Date of filing : 27.03.2000

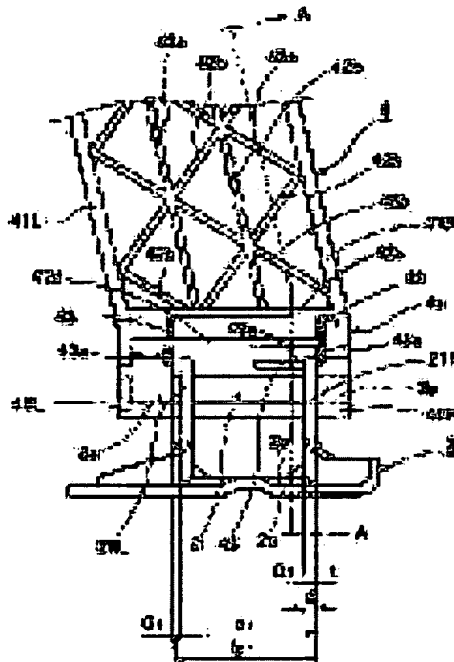
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(54) STRUCTURE OF ACCELERATOR PEDAL FOR VEHICLE

(57)Abstract:

PROBLEM TO BE SOLVED: To reduce the amount of an axial clearance in the bearing part of an accelerator pedal at a low cost with a simple structure.

SOLUTION: This structure of an accelerator pedal for vehicle comprises a retainer 2 fixed onto the floor panel of a vehicle and having a pair of right and left side walls 21R and 21L for connecting an accelerator pedal pad 4, the accelerator pedal pad having an engaging recessed part for engaging the side walls for connecting the accelerator pedal pad and right and left boss parts 46R and 46L located on both sides of the fitting recessed part and allowing the right and left ends of a rotating pivot shaft for connection 3 to be fitted thereto, and the rotating pivot shaft for connection rotatably connecting the accelerator pedal pad to the retainer by fitting the right and left end parts to the right and left boss parts in the state of being passed through the side walls. A position limiting rib 45 for limiting the movement of the accelerator pedal pad in the outside direction of the rotating pivot shaft is disposed at a position opposed to the boss parts adjacent to each other through either of the pair of right and left side walls for connecting accelerator pedal pad on the retainer side of the accelerator pedal pad.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's
decision of rejection]

[Date of extinction of right]

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3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] The retainer which has the side attachment wall for accelerator pedal foam lining connection of a Uichi Hidari pair which is fixed on the floor panel of a car, and keeps predetermined spacing mutually and counters it, The accelerator pedal foam lining which has the right-and-left boss section to which it is in the both sides of the fitting crevice which fits in the side attachment wall for the accelerator pedal foam lining connection of an above-mentioned Uichi Hidari pair of this retainer, and this fitting crevice, and fitting of right-and-left each edge of the rotation pivot for connection is carried out, Where the side attachment wall for the above-mentioned accelerator pedal foam lining connection is penetrated, by carrying out fitting to the above-mentioned right-and-left boss section, right-and-left each edge In the accelerator pedal for cars of the floor line support mold which comes to have the rotation pivot for connection connected pivotable the above-mentioned accelerator pedal foam lining -- the above-mentioned retainer -- receiving -- relativity -- In the location which counters the above-mentioned boss section which adjoins on both sides of either of the side attachment walls for the accelerator pedal foam lining connection of an above-mentioned retainer side Hidari [Uichi] pair of the above-mentioned accelerator pedal foam lining Structure of the accelerator pedal for cars characterized by preparing the location regulation rib which regulates migration in the above-mentioned rotation pivot outside direction of the above-mentioned accelerator pedal foam lining.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] The invention in this application relates to the structure of the accelerator pedal for cars.

[0002]

[Description of the Prior Art] There are some types of the accelerator pedals for cars, and generally, in the case of cars, such as a truck, as shown in drawing 3 , many accelerator pedals of the floor line support mold with which lower limit 4a of the accelerator pedal foam lining 4 was supported to revolve pivotable through the retainer 2 at the floor panel 1 side are used.

[0003] The retainer 2 by which anterior part 2a and posterior part 2b were fixed on the floor panel 1 of a car drivers side corresponding to the field configuration of the floor panel 1 as this accelerator pedal was shown in this drawing 3 , Side-attachment-wall 21L for accelerator pedal foam lining connection of a Uichi Hidari pair which started to the posterior part 2b side upper part of this retainer 2, and was prepared in it, and the accelerator pedal foam lining 4 with which the lower limit 4a side was supported to revolve free [rotation] through the rotation pivot 3 for connection on 21R, The coordinated arm 5 of the shape of a typeface of **** which engaged the lower limit 5a side with engagement section 4c of the slot structure on the rear face of the upper limit 4b side of this accelerator pedal foam lining 4, enabling free relative rotation, The rotation lever 6 by which connection immobilization of the upper limit 5b of this coordinated arm 5 was carried out in the rotation edge 6a side center section, It is attached in the cowl side panel which is not illustrated through the predetermined mounting-bracket sections 8b and 8c. The accelerator pedal assembly 8 with which the support edge 6b side of the above-mentioned rotation lever 6 was fixed to revolve pivotable through the rotation pivot 7 by side-attachment-wall section 8a of the direction of an abbreviation vertical plane, The return spring 9 which the end side was fixed by this accelerator pedal assembly 8, and engaged the other end side with the rotation edge of the above-mentioned rotation lever 6, The accelerator outer cable connection section 13 prepared in 8d side of lower parts of the above-mentioned accelerator pedal assembly 8, The accelerator inner cable connection section 10 prepared at the tip of the rotation edge 6a side of the above-mentioned rotation lever 6, It has the accelerator outer cable 12 fixed to the above-mentioned accelerator outer cable connection section 13, and the accelerator inner cable 11 connected through engagement heights 11a to the above-mentioned accelerator inner cable connection section 10, and is constituted.

[0004] And rather than the above-mentioned rotation pivot 3 of the above-mentioned accelerator pedal foam lining 4, if a part for an upper part flank is stepped on in the direction of an illustration arrow head (a), according to it, the above-mentioned coordinated frame 5 will rotate in the direction of an illustration arrow head (b), and, finally the above-mentioned rotation lever 6 will rotate in the direction of an illustration arrow head (c) through this coordinated frame 5.

[0005] Consequently, the accelerator inner cable 11 is lengthened in the direction of an arrow head (d) through the above-mentioned accelerator wire connection section 10, and an engine throttle valve is opened.

[0006] By the way, in order to secure smooth operability, as for the above-mentioned accelerator pedal foam lining 4 of this accelerator pedal, it is desirable to be certainly supported to revolve with the stable relation which has neither slack nor a backlash mutually to the retainer 2 by the side of the above-mentioned floor panel 1. If slack and backlash are in the support section, horizontal rigidity runs short, and at the time of accelerator pedal treading in, an accelerator pedal foam lining will rock to a longitudinal direction, and will impress sense of incongruity.

[0007] Therefore, both in the conventional example are mutually connected with the connection engagement structure stabilized comparatively as shown in drawing 4 or drawing 5.

[0008] In the case of the example of connection structure of drawing 4, first the above-mentioned accelerator pedal foam lining 4 While consisting of synthetic-resin material, making the shape of a cross-section KO character and having the side-attachment-wall sections 41L and 41R of thickness right and left those insides — a longitudinal direction and the slanting direction — the stiffening ribs 42a, 42a, 42b, and 42b of each two or more books — though it is as much as possible lightweight by fabricating ... to one, it is constituted so that it may become what has rigidity high moreover fully. and to a joining segment with the lower limit 4a side retainer 2 The stiffening ribs 42c, 42d, 43, and 43 of the two upper and lower sides and-two right and left are formed in one. The boss sections 46L and 46R of the heavy-gage barrel structure which equipped the both sides of the crevice part which fits in the side attachment walls 21L and 21R for connection of two right and left parallel to both the lower part side retainers 2 with the fitting hole which carries out fitting maintenance of each edges 3a and 3b of the above-mentioned rotation pivot 3 for connection are formed. And the accelerator pedal foam lining 4 and a retainer 2 are mutually connected free [rotation] by carrying out press fit engagement and finally, fixing like illustration in the fitting hole of left-hand side boss section 46L, by making the

sequential penetration of the above-mentioned rotation pivot 3 which formed the serration for engagement in the tip 3a side carry out in the direction for left-hand side connection of side-attachment-wall 21L from the right-hand side boss section 46R and side-attachment-wall 21R side for right-hand side connection.

[0009] In the case of such connection structure of drawing 4 , the backlash of the direction of a rotation rocking lever shaft is determined by the amount c1 of clearances needed at worst from the relation between each processing tolerance of the supporting-point width of face a1 of the retainer 2 which constitutes the rotation supporting-point section of the accelerator pedal foam lining 4, and the supporting-point width of face b1 of the accelerator pedal foam lining 4, rotationability, and assemblability.

[0010] Also in the case of the example of structure of drawing 5 , next, the above-mentioned accelerator pedal foam lining 4 While consisting of synthetic-resin material similarly, making the shape of a cross-section KO character and having the thick side attachment walls 41L and 41R right and left those insides -- a longitudinal direction and the slanting direction -- the stiffening ribs 42a, 42a, 42b, and 42b of each two or more books -- though it is as much as possible lightweight by fabricating ... to one, it is constituted so that it may become what has rigidity high moreover fully. On the other hand, to a joining segment with the lower limit 4a side retainer 2 The stiffening ribs 42c, 42d, 43, and 43 of the two upper and lower sides and-two right and left are formed in one. The boss sections 48L and 48R of the heavy-gage barrel structure which had the insertion hole which carries out insertion maintenance of each edges 3a and 3b of the above-mentioned rotation pivot 3 inside [both] right-and-left both-sides wall 41L which fits in the side attachment walls 21L and 21R for connection of two right and left parallel to both the lower part side retainers 2, and the 41R side crevice part predetermined spacing It is maintained and prepared. and To the tip 3a side, a ring-E fitting slot A ring E is fitted into a part for the ring-E fitting slot which the sequential penetration of the formed rotation pivot 3 for connection was made to carry out in left-hand side boss section 48L and the direction for left-hand side connection of side-attachment-wall 21L from the side-attachment-wall 21for right-hand side connection R, and right-hand side boss section 46R side, and was finally projected from side-attachment-wall 21L for left-hand side connection. By fixing like illustration, the accelerator pedal foam lining 4 and a retainer 2 are connected mutually free [rotation].

[0011] Also in the case of such connection structure of drawing 5 , the backlash of the direction of a rotation pivot The rotation supporting-point section of the

accelerator pedal foam lining 4 The amount c2 of clearances needed at worst from the relation between each processing tolerance of the supporting-point width of face a2 of the retainer 2 to constitute, and the supporting-point width of face b2 of the accelerator pedal foam lining 4, rotationability, and assemblability and the ring-E slot location tolerance by the side of tip 3a, and the outside width method tolerance of the side attachment walls 21L and 21R for connection, The thing adding the amount (not shown) which furthermore took into consideration the tolerance of thickness of a ring E, and took the attachment nature into consideration is determined.

[0012]

[Problem(s) to be Solved by the Invention] the above drawing 4 and drawing 5 -- in any case of the example of connection structure, in order to control the variation in the backlash of the above-mentioned rotation pivot direction to whenever [minimum], it is necessary to make strict each above-mentioned processing tolerance a1, b1, a2, and b2 as much as possible.

[0013] On the other hand, in order to secure the rigidity of the above-mentioned rotation pivot section, and reinforcement, minimum predetermined supporting-point width of face (generally about 50mm) is needed for convenience' sake on a car layout etc. Although the above-mentioned processing tolerance a1, b1, a2, and b2 cannot but make this tolerance the minimum by the processing approach etc. since it is limited by the magnitude of the dimension which generally applies the tolerance (tolerance becomes large, so that the dimension applied is large), the approach has a limitation by cost etc.

[0014] The invention in this application was made in order to solve the above problems, it prepares the specification-part material which regulates relative displacement to an accelerator pedal foam lining and the direction of a rotation pivot between retainers, and aims at offering the accelerator pedal for cars which controlled the amount of backlashes of the direction of a rotation pivot to the minimum.

[0015]

[Means for Solving the Problem] The invention in this application is constituted in the following technical-problem solution means, in order to attain the above-mentioned purpose.

[0016] namely, with the structure of the accelerator pedal for cars of the gestalt of operation of the invention in this application The retainer which has the side attachment wall for accelerator pedal foam lining connection of a Uichi Hidari pair which is fixed on the floor panel of a car, and keeps predetermined spacing mutually and counters it, The accelerator pedal foam lining which has the right-and-left boss

section to which it is in the both sides of the fitting crevice which fits in the side attachment wall for the accelerator pedal foam lining connection of an above-mentioned Uichi Hidari pair of this retainer, and this fitting crevice, and fitting of right-and-left each edge of the rotation pivot for connection is carried out, Where the side attachment wall for the above-mentioned accelerator pedal foam lining connection is penetrated, by carrying out fitting to the above-mentioned right-and-left boss section, right-and-left each edge In the accelerator pedal for cars of the floor line support mold which comes to have the rotation pivot for connection connected pivotable the above-mentioned accelerator pedal foam lining — the above-mentioned retainer — receiving — relativity — It is characterized by preparing the location regulation rib which regulates migration in the above-mentioned rotation pivot outside direction of the above-mentioned accelerator pedal foam lining in the location which counters the above-mentioned boss section on both sides of either of the side attachment walls for the accelerator pedal foam lining connection of an above-mentioned retainer side Hidari [Uichi] pair of the above-mentioned accelerator pedal foam lining.

[0017] With such a configuration, on both sides of the side attachment wall for connection by the side of a retainer, migration in the above-mentioned rotation pivot outside direction can be regulated now with high precision between the location regulation rib by the side of an accelerator pedal foam lining, and the boss section for rotation pivot fitting, and applicability of processing tolerance can be made into min by setting the dimension by the side of an accelerator pedal foam lining as min. It becomes possible to synthesize them and to suppress generating of backlash to the minimum also about the plate of the side attachment wall for connection by the side of the above-mentioned retainer, since only the processing tolerance of the board thickness is applied (only the tolerance of board thickness is applied in the case of the retainer made from a steel plate) at it and coincidence.

[0018] Therefore, it becomes possible to reduce the backlash of the direction of a rotation pivot to the minimum, without applying cost.

[0019]

[Embodiment of the Invention] Drawing 1 and drawing 2 show the structure of the accelerator pedal for cars concerning the gestalt of operation of the invention in this application.

[0020] The accelerator pedal for cars of the gestalt of this operation is located near the rotation supporting point of an accelerator pedal foam lining, and its side attachment wall for retainer side connection is pinched between the accelerator pedal

foam lining side boss sections, and it is characterized by performing slide regulation of the direction of a rotation pivot.

[0021] Therefore, the accelerator pedal foam lining and retainer in a gestalt of this operation are engagement structure as shown in drawing 1 , and are connected mutually.

[0022] In the case of the example of structure of drawing 1 , namely, the above-mentioned accelerator pedal foam lining 4 While consisting of synthetic-resin material as usual, for example, making the shape of a cross-section KO character and having the side-attachment-wall sections 41L and 41R of thickness right and left those insides — a longitudinal direction and the slanting direction — the stiffening ribs 42a, 42a, 42b, and 42b of each two or more books — though it is as much as possible lightweight by fabricating ... to one, it is constituted so that it may become what has rigidity high moreover fully. and to a joining segment with the lower limit 4a side retainer 2 The stiffening ribs 42c, 42d, 43, and 43 of the two upper and lower sides and—two right and left are formed in one. The boss sections 46L and 46R of the heavy-gage barrel structure which equipped the both sides of the crevice part which fits in the side attachment walls 21L and 21R for connection of two right and left parallel to both the lower part side retainers 2 with the fitting hole which carries out fitting maintenance of each edges 3a and 3b of the above-mentioned rotation pivot 3 are formed. and The serration for engagement to the tip 3a side Carry out sequential penetration of the formed above-mentioned rotation pivot 3 at the rotation pivot insertion hole side of side-attachment-wall 21L for left-hand side connection from each rotation pivot insertion hole side of the right-hand side boss section 46R concerned and side-attachment-wall 21R for right-hand side connection, and, finally the serration section is minded in the rotation pivot press fit hole of the above-mentioned left-hand side boss section 46L. By carrying out press fit engagement and fixing like illustration, the accelerator pedal foam lining 4 and a retainer 2 are connected mutually free [rotation].

[0023] And in this connection condition, through the upper limit section of the above-mentioned side-attachment-wall 21R for right-hand side connection, the above-mentioned right-hand side boss section 46R and tip 45a of the location regulation rib 45 will counter mutually, and regulate certainly migration to the shaft orientations of the rotation pivot 3 of the above-mentioned accelerator pedal foam lining 4, and a backlash by attachment to the right-and-left both directions of them and side-attachment-wall 21R for right-hand side connection.

[0024] namely, with the structure of the accelerator pedal for cars of the gestalt of

operation of the invention in this application The retainer 2 which has the side attachment walls 21L and 21R for accelerator pedal foam lining connection of a Uichi Hidari pair which are fixed on the floor panel 1 of a car, and keep predetermined spacing mutually and counter it, The accelerator pedal foam lining 4 which has the right-and-left boss sections 46L and 46R to which it is in the both sides of the fitting crevice which fits in the side attachment walls 21L and 21R for the accelerator pedal foam lining connection of an above-mentioned Uichi Hidari pair of this retainer 2, and this fitting crevice, and fitting of right-and-left each edges 3a and 3b of the rotation pivot 3 for connection is carried out, Where the side attachment walls 21L and 21R for the above-mentioned accelerator pedal foam lining connection are penetrated, right-and-left each edges 3a and 3b by carrying out fitting to the above-mentioned right-and-left boss sections 46L and 46R In the accelerator pedal for cars of the floor line support mold which comes to have the rotation pivot 3 for connection connected pivotable the above-mentioned accelerator pedal foam lining 4 — the above-mentioned retainer 2 — receiving — relativity — In the location which counters the above-mentioned boss section 46R (either 46L or 46R) which adjoins on both sides of side-attachment-wall 21R for accelerator pedal foam lining connection of the above-mentioned retainer 2 side Hidari [Uichi] pair of the above-mentioned accelerator pedal foam lining 4 (either 21L or 21R) It is characterized by forming the location regulation rib 45 which regulates migration in the above-mentioned rotation pivot 3 outside direction for connection of the above-mentioned accelerator pedal foam lining 4.

[0025] With such a configuration Between boss section 46R for rotation pivot 3 fitting for connection (either 46L or 46R) which adjoins the location regulation rib 45 and the homotopic regulation rib 45 by the side of the accelerator pedal foam lining 4 Side-attachment-wall 21R for connection by the side of a retainer 2 (either 21L or 21R) can be inserted, and migration in the above-mentioned rotation pivot 3 outside direction of the accelerator pedal foam lining 4 can be regulated now with high precision. It becomes possible to make tolerance d over the application dimension into min by making the dimension by the side of the accelerator pedal foam lining 4 into min. Since only the processing tolerance t of the board thickness of side-attachment-wall 21R for connection by the side of the above-mentioned retainer 2 (either 21L or 21R) is applied at it and coincidence (it becomes application of the minimum tolerance t of board thickness in the case of the retainer made from a steel plate), It becomes possible to make into min the amount of clearances which should furthermore be secured, and since application tolerance of the processing tolerance a1, b1, and c1

can be made into min (c2) regardless of the amount c1 of clearances which should be secured conventionally, they can be synthesized and generating of backlash can be suppressed to the minimum.

[0026] Therefore, it becomes possible to reduce the backlash of rotation pivot 3 direction to the minimum, without applying cost.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the rear view of an important section showing the structure of the accelerator pedal for cars concerning the gestalt of operation of the invention in this application.

[Drawing 2] It is the sectional view of the A-A line cutting section of drawing 1 .

[Drawing 3] It is the side elevation showing the whole accelerator pedal structure of the conventional car.

[Drawing 4] It is the rear view of an important section showing the 1st [to the retainer of the accelerator pedal foam lining of this accelerator pedal] example of connection structure.

[Drawing 5] It is the rear view of an important section showing the 2nd [to the retainer of the accelerator pedal foam lining of this accelerator pedal] example of connection structure.

[Description of Notations]

1 -- a floor panel and 2 -- a retainer and 3 -- a rotation pivot and 3a -- a tip and 3b -- a end face and 4 -- for a left-hand side side attachment wall and 21R, a right-hand side side attachment wall and 45 are [an accelerator pedal foam lining and 4a / a lower limit and 21L / the left-hand side boss section and 46R of a location regulation rib and 46L] the right-hand side boss sections.

[Translation done.]

(19)日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11)特許出願公開番号

特開2001-270343

(P2001-270343A)

(43)公開日 平成13年10月2日(2001.10.2)

(51)Int.Cl.

識別記号

F I

ターミナル* (参考)

B 6 0 K 26/02

B 6 0 K 26/02

3 D 0 3 7

F 0 2 D 11/02

F 0 2 D 11/02

S 3 G 0 6 5

審査請求 未請求 請求項の数1 O L (全 6 頁)

(21)出願番号 特願2000-87177(P2000-87177)

(22)出願日 平成12年3月27日(2000.3.27)

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Fターム(参考) 3D037 EA01 EB02 EC01

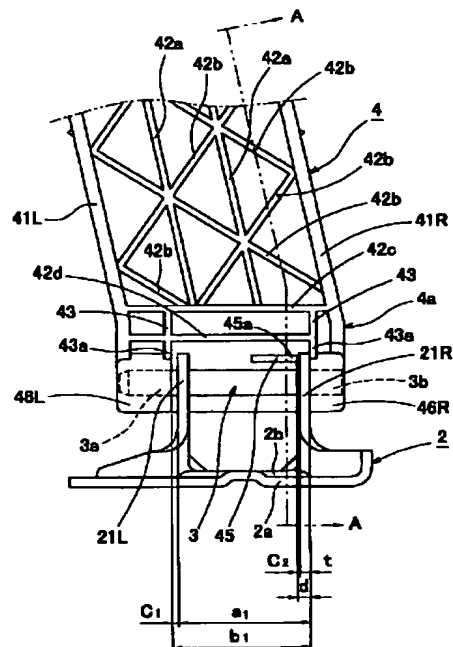
3G065 CA26 JA04 JA11

(54)【発明の名称】 車両用アクセルペダルの構造

(57)【要約】 (修正有)

【課題】 アクセルペダルの軸支部の軸方向のガタツキ量を簡単な構成で低コストに低減する。

【解決手段】 車両のフロアパネル上に固定され、かつ左右一対のアクセルペダルパッド4連結用の側壁21L、21Rを有するリテーナ2と、アクセルペダルパッド連結用の側壁を嵌合する嵌合凹部および嵌合凹部の両側において連結用回転支軸3の左右各端が嵌合される左右ボス部46L、46Rを有するアクセルペダルパッドと、側壁を貫通した状態で左右端部を左右ボス部に嵌合されることにより、アクセルペダルパッドをリテーナに対して相対回転可能に連結する連結用回転支軸とを備える。アクセルペダルパッドのリテーナ側左右一対のアクセルペダルパッド連結用の側壁の何れか一方を挟んで隣接するボス部に対向する位置に、アクセルペダルパッドの回転支軸外側方向への移動を規制する位置規制リップ45を設けた。



【特許請求の範囲】

【請求項1】 車両のフロアパネル上に固定され、かつ相互に所定の間隔を置いて対向する左右一対のアクセルペダルバット連結用の側壁を有するリテーナと、このリテーナの上記左右一対のアクセルペダルバット連結用の側壁を嵌合する嵌合凹部および該嵌合凹部の両側にあって連結用回転支軸の左右各端が嵌合される左右ボス部を有するアクセルペダルバットと、上記アクセルペダルバット連結用の側壁を貫通した状態で左右各端部を上記左右ボス部に嵌合されることにより、上記アクセルペダルバットを上記リテーナに対して相対回転可能に連結する連結用回転支軸とを備えてなる床面軸支型の車両用アクセルペダルにおいて、上記アクセルペダルバットの上記リテーナ側左右一対のアクセルペダルバット連結用の側壁の何れか一方を挟んで隣接する上記ボス部に対向する位置に、上記アクセルペダルバットの上記回転支軸外側方向への移動を規制する位置規制リブを設けたことを特徴とする車両用アクセルペダルの構造。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本願発明は、車両用アクセルペダルの構造に関するものである。

【0002】

【従来の技術】車両用のアクセルペダルには、幾つかのタイプがあり、一般にトラック等の車両の場合には、例えば図3に示すように、アクセルペダルバット4の下端4aがリテーナ2を介してフロアパネル1側に回転可能に軸支された床面軸支型のアクセルペダルが多く用いられている。

【0003】このアクセルペダルは、同図3に示すように、車両運転席側のフロアパネル1上に前部2aおよび後部2bがフロアパネル1の面形状に対応して固定されたリテーナ2と、このリテーナ2の後部2b面上方に切り起して設けられた左右一対のアクセルペダルバット連結用の側壁21L、21R上に連結用回転支軸3を介して下端4a側が回転自在に軸支されたアクセルペダルバット4と、このアクセルペダルバット4の上端4b側裏面の長穴構造の係合部4cに下端5a側を相対回転自在に係合した略くの字形の連係アーム5と、この連係アーム5の上端5bが回転端6a側中央部に連結固定された回転レバー6と、所定の取付ブラケット部8b、8cを介して図示しないカウルサイドパネルに取付けられ、その略垂直面方向の側壁部8aに、上記回転レバー6の軸支端6b側が回転支軸7を介して回転可能に軸着されたアクセルペダルアッセンブリー8と、このアクセルペダルアッセンブリー8に一端側を固定され、他端側を上記回転レバー6の回転端に係合したリターンバネ9と、上記アクセルペダルアッセンブリー8の下部8d側に設けられたアクセルアウターケーブル連結部13と、上記回転レバー6の回転端6a側先端に設けられたアクセル

インナーケーブル連結部10と、上記アクセルアウターケーブル連結部13に固定されたアクセルアウターケーブル12と、上記アクセルインナーケーブル連結部10に対して係合凸部11aを介して連結されたアクセルインナーケーブル11とを備えて構成されている。

【0004】そして、上記アクセルペダルバット4の上記回転支軸3よりも上方側部分が、図示矢印(a)方向に踏まれると、それに応じて上記連係フレーム5が図示矢印(b)方向に回転し、この連係フレーム5を介して最終的に上記回転レバー6が図示矢印(c)方向に回転する。

【0005】その結果、上記アクセルワイヤー連結部10を介してアクセルインナーケーブル11が矢印(d)方向に引かれて、エンジンのスロットル弁が開かれる。

【0006】ところで、このアクセルペダルの上記アクセルペダルバット4は、スムーズな操作性を確保するために、上記フロアパネル1側のリテーナ2に対して、相互に緩みやガタツキのない安定した関係で確実に軸支されることが望ましい。もしも、軸支部に緩みやガタがあると、横剛性が不足し、アクセルペダル踏み込み時にアクセルペダルバットが左右方向に揺動して違和感を感じさせる。

【0007】そのために、従来例における両者は、例えば図4又は図5に示すような比較的安定した連結係合構造で、相互に連結されるようになっていた。

【0008】先ず図4の連結構造例の場合、上記アクセルペダルバット4は、合成樹脂材よりなり、断面コ字状をなして左右に肉厚の側壁部41L、41Rを有するとともに、それらの内側に長手方向および斜目方向に各々複数本の補強用リブ42a、42a、42b、42b・・・を一体に成形することによって、可及的に軽量でありながら、しかも十分に剛性が高いものとなるように構成されている。そして、その下端4a側リテーナ2との連結部分には、上下2本および左右2本の補強用リブ42c、42d、43、43が一体に設けられ、その下部側リテーナ2の相互に平行な左右2枚の連結用側壁21L、21Rを嵌合する凹部部分の両側に上述の連結用回転支軸3の各端部3a、3bを嵌合保持する嵌合孔を備えた厚肉筒体構造のボス部46L、46Rが設けられている。そして、先端3a側に係合用のセレーションを形成した上記回転支軸3を右側ボス部46Rおよび右側連結用側壁21R側から左側連結用側壁21L方向に順次貫通させることによって最終的に左側ボス部46Lの嵌合孔内に圧入係合して図示のように固定することにより、アクセルペダルバット4とリテーナ2とが相互に回転自在に連結される。

【0009】このような図4の連結構造の場合、回転支点軸方向のガタは、アクセルペダルバット4の回転支点部を構成するリテーナ2の支点幅a₁およびアクセルペダルバット4の支点幅b₁の各加工公差と回転性能およ

び組付性の関係から最低限必要とされる隙間量 c_1 とによって決定される。

【0010】次に図5の構造例の場合にも、上記アクセルペダルバット4は、同様に合成樹脂材よりなり、断面コ字状をなして左右に肉厚の側壁41L、41Rを有するとともに、それらの内側に長手方向および斜目方向に各々複数本の補強用リブ42a、42a、42b、42b・・・を一体に成形することによって、可及的に軽量でありながら、しかも十分に剛性が高いものとなるように構成されている。一方、その下端4a側リテーナ2との連結部分には、上下2本および左右2本の補強用リブ42c、42d、43、43が一体に設けられ、その下部側リテーナ2の相互に平行な左右2枚の連結用側壁21L、21Rを嵌合する左右両側壁部41L、41R側凹部部分の両内側には上述の回転軸3の各端部3a、3bを挿通保持する挿通孔を備えた厚肉筒体構造のボス部48L、48Rが所定間隔を保って設けられている。そして、先端3a側にEリング嵌合溝を形成した連結用回転軸3を右側連結用側壁21Rおよび右側ボス部46R側から左側ボス部48Lおよび左側連結用側壁21L方向に順次貫通させて最終的に左側連結用側壁21Lより突出したEリング嵌合溝部分にEリングを嵌合して図示のように固定することにより、アクセルペダルバット4とリテーナ2とが相互に回転自在に連結される。

【0011】このような図5の連結構造の場合にも、回転軸方向のガタは、アクセルペダルバット4の回転支点部を構成するリテーナ2の支点幅 a_1 およびアクセルペダルバット4の支点幅 b_1 の各加工公差と回転性能および組付性の関係から最低限必要とされる隙間量 c_1 及び先端3a側のEリング溝位置公差と連結用側壁21L、21Rの外幅寸法公差、さらにはEリングの板厚公差を勘案してその組み付け性を考慮した(図示しない)量を加算したものによって決定される。

【0012】

【発明が解決しようとする課題】以上の図4、図5何れの連結構造例の場合にも、上記回転軸方向のガタのバラツキを最少限度に抑制するためには、上記各加工公差 a_1 、 b_1 、 a_2 、 b_2 を可及的に厳格にすることが必要となる。

【0013】一方、上記回転軸部の剛性、強度を確保するため、或いは、車両レイアウト上の都合等により、最低限所定の支点幅(一般的に50mm程度)を必要とする。上記加工公差 a_1 、 b_1 、 a_2 、 b_2 は、一般にその公差を適用する寸法の大きさによって限定される(適用される寸法が大きい程公差は大きくなる)為、加工方法等により同公差を最少限にするしかないが、その方法はコスト等による限界がある。

【0014】本願発明は、上記のような問題を解決するためになされたもので、アクセルペダルバットとリテーナ相互の回転軸方向への相対移動を規制する規制部材

を設けて、回転軸方向のガタツキ量を最少限に抑制するようにした車両用アクセルペダルを提供することを目的とするものである。

【0015】

【課題を解決するための手段】本願発明は、上記の目的を達成するために、次のような課題解決手段を備えて構成されている。

【0016】すなわち、本願発明の実施の形態の車両用アクセルペダルの構造では、車両のフロアパネル上に固定され、かつ相互に所定の間隔を置いて対向する左右一対のアクセルペダルバット連結用の側壁を有するリテーナと、このリテーナの上記左右一対のアクセルペダルバット連結用の側壁を嵌合する嵌合凹部および該嵌合凹部の両側にあつて連結用回転軸の左右各端が嵌合される左右ボス部を有するアクセルペダルバットと、上記アクセルペダルバット連結用の側壁を貫通した状態で左右各端部を上記左右ボス部に嵌合されることにより、上記アクセルペダルバットを上記リテーナに対して相対回転可能に連結する連結用回転軸とを備えてなる床面軸支型の車両用アクセルペダルにおいて、上記アクセルペダルバットの上記リテーナ側左右一対のアクセルペダルバット連結用の側壁の何れか一方を挟んで上記ボス部に対向する位置に、上記アクセルペダルバットの上記回転軸外側方向への移動を規制する位置規制リブを設けたことを特徴としている。

【0017】このような構成では、アクセルペダルバット側の位置規制リブと回転軸嵌合用のボス部との間にリテーナ側の連結用側壁を挟んで上記回転軸外側方向への移動を高精度に規制することができるようになり、アクセルペダルバット側の寸法を最小に設定することにより、加工公差の適用範囲を最小にすることができる。それと同時に上記リテーナ側の連結用側壁の板についても、その板厚の加工公差のみ適用となる(鋼板製リテーナの場合、板厚の公差のみ適用となる)ため、それらを総合してガタの発生を最少限に抑えることが可能となる。

【0018】従って、コストをかけずに回転軸方向のガタを最少限に低減することが可能となる。

【0019】

【発明の実施の形態】図1および図2は、本願発明の実施の形態に係る車両用アクセルペダルの構造を示している。

【0020】この実施の形態の車両用アクセルペダルは、アクセルペダルバットの回転軸付近に位置して、リテーナ側連結用側壁をアクセルペダルバット側ボス部との間で挟み、回転軸方向のスライド規制を行うようにしたことを特徴とするものである。

【0021】そのために、この実施の形態におけるアクセルペダルバットとリテーナは、例えば図1に示すような係合構造で、相互に連結されている。

【0022】すなわち、図1の構造例の場合、上記アクセルペダルバット4は、従来と同様に合成樹脂材よりなり、例えば断面コ字状をなして左右に肉厚の側壁部41L、41Rを有するとともに、それらの内側に長手方向および斜目方向に各々複数本の補強用リブ42a、42a、42b、42b・・・を一体に成形することによって、可及的に軽量でありながら、しかも十分に剛性が高いものとなるように構成されている。そして、その下端4a側リテーナ2との連結部分には、上下2本および左右2本の補強用リブ42c、42d、43、43が一体に設けられ、その下部側リテーナ2の相互に平行な左右2枚の連結用側壁21L、21Rを嵌合する凹部部分の両側に上述の回転軸3の各端部3a、3bを嵌合保持する嵌合孔を備えた厚肉筒体構造のボス部46L、46Rが設けられている。そして、先端3a側に係合用のセレーションを形成した上記回転軸3を当該右側ボス部46Rおよび右側連結用側壁21Rの各回転軸挿通孔側から左側連結用側壁21Lの回転軸挿通孔側に順次貫通させて最終的に上記左側ボス部46Lの回転軸圧入孔内にセレーション部を介して圧入係合して図示のように固定することにより、アクセルペダルバット4とリテーナ2が相互に回転自在に連結される。

【0023】そして、該連結状態では、上記右側連結用側壁21Rの上端部を介して上記右側ボス部46Rと位置規制リブ45の先端45aとが相互に対向することになり、それらと右側連結用側壁21Rとの左右両方向への衝合により、上記アクセルペダルバット4の回転軸3の軸方向への移動、ガタツキを確実に規制する。

【0024】すなわち、本願発明の実施の形態の車両用アクセルペダルの構造では、車両のフロアパネル1上に固定され、かつ相互に所定の間隔を置いて対向する左右一対のアクセルペダルバット連結用の側壁21L、21Rを有するリテーナ2と、このリテーナ2の上記左右一対のアクセルペダルバット連結用の側壁21L、21Rを嵌合する嵌合凹部および該嵌合凹部の両側において連結用回転軸3の左右各端3a、3bが嵌合される左右ボス部46L、46Rを有するアクセルペダルバット4と、上記アクセルペダルバット連結用の側壁21L、21Rを貫通した状態で左右各端部3a、3bを上記左右ボス部46L、46Rに嵌合されることにより、上記アクセルペダルバット4を上記リテーナ2に対して相対回転可能に連結する連結用回転軸3とを備えてなる床面軸支型の車両用アクセルペダルにおいて、上記アクセルペダルバット4の上記リテーナ2側左右一対のアクセル

ペダルバット連結用の側壁21R(21L又は21Rの何れか一方)を挟んで隣接する上記ボス部46R(46L又は46Rの何れか一方)に対向する位置に、上記アクセルペダルバット4の上記連結用回転軸3外側方向への移動を規制する位置規制リブ45を設けたことを特徴としている。

【0025】このような構成では、アクセルペダルバット4側の位置規制リブ45と同位置規制リブ45に隣接する連結用回転軸3嵌合用のボス部46R(46L又は46Rの何れか一方)との間にリテーナ2側の連結用側壁21R(21L又は21Rの何れか一方)が挟まれてアクセルペダルバット4の上記回転軸3外側方向への移動を高精度に規制することができるようになり、アクセルペダルバット4側の寸法を最小にすることにより、その適用寸法に対する公差dを最小にすることが可能となり、それと同時に上記リテーナ2側の連結用側壁21R(21L又は21Rの何れか一方)の板厚の加工公差tのみ適用となる(鋼板製リテーナの場合、板厚の極小公差tのみの適用になる)ため、さらに確保すべき隙間量c₁に関係なく、加工公差a₁、b₁、c₁の適用公差を最小(c₁)にする事ができるため、それらを総合してガタの発生を最小限に抑えることができる。

【0026】従って、コストをかけずに回転軸3方向のガタを最少限に低減することが可能となる。

【図面の簡単な説明】

【図1】本願発明の実施の形態に係る車両用アクセルペダルの構造を示す要部の背面図である。

【図2】図1のA-A線切断部の断面図である。

【図3】従来の車両のアクセルペダルの全体構造を示す側面図である。

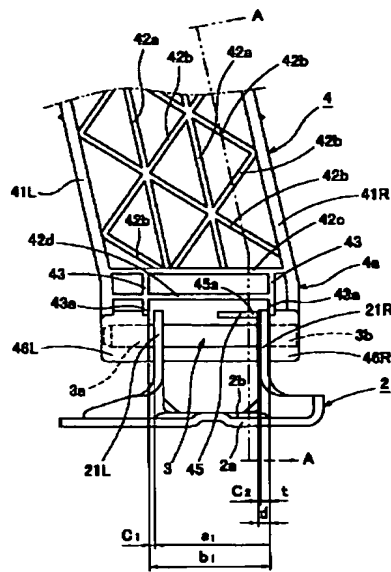
【図4】同アクセルペダルのアクセルペダルバットのリテーナに対する第1の連結構造例を示す要部の背面図である。

【図5】同アクセルペダルのアクセルペダルバットのリテーナに対する第2の連結構造例を示す要部の背面図である。

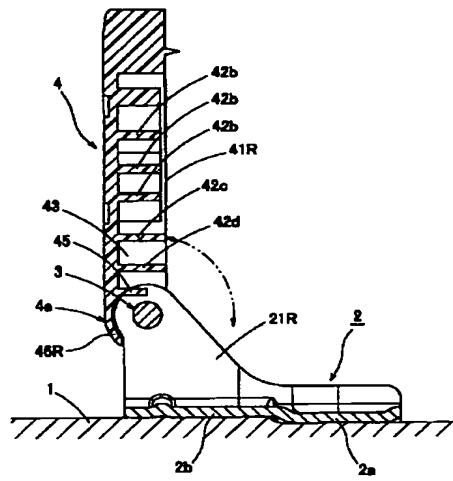
【符号の説明】

1はフロアパネル、2はリテーナ、3は回転軸、3aは先端、3bは基端、4はアクセルペダルバット、4aは下端、21Lは左側の側壁、21Rは右側の側壁、45は位置規制リブ、46Lは左側ボス部、46Rは右側ボス部である。

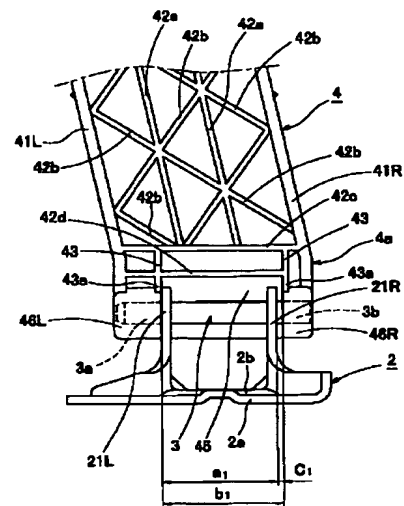
【図1】



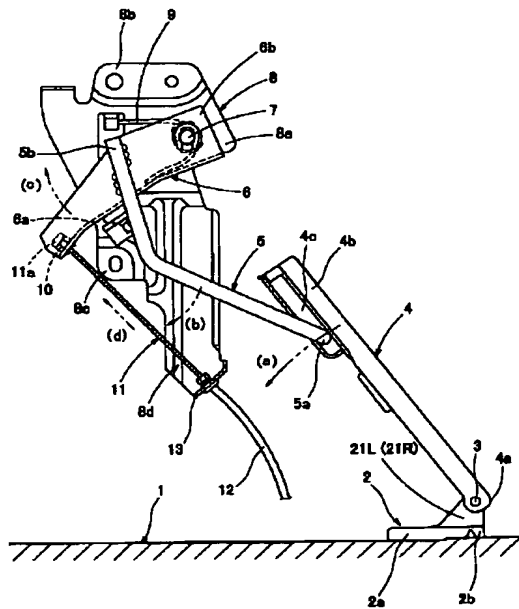
【図2】



【図4】



【図3】



【図5】

